

(No Model.)

G. W. KNAPP.

ATTACHING BAIL EARS TO COVERED VESSELS.

No. 249,371.

Patented Nov. 8, 1881.

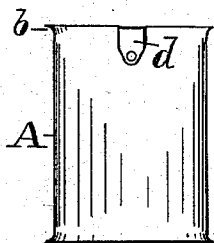


Fig. 1.

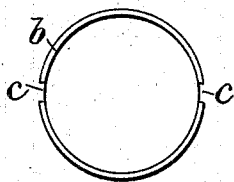


Fig. 2.

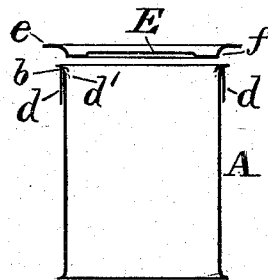


Fig. 3.

Fig. 5.



Fig. 10.

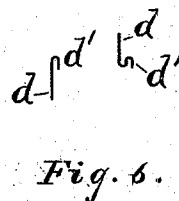


Fig. 6.

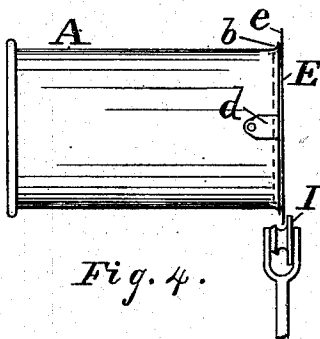


Fig. 4.

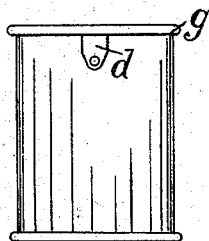


Fig. 7.

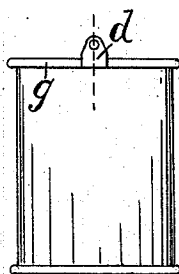


Fig. 8.

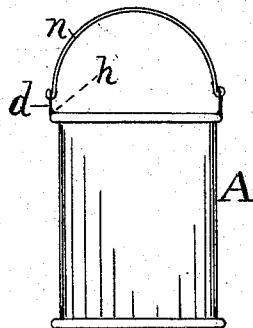


Fig. 9.

Witnesses:

W. L. Langley,
A. C. Eder

Inventor:

George W. Knapp
By his Atty
Chas B. Mann

UNITED STATES PATENT OFFICE.

GEORGE W. KNAPP, OF BALTIMORE, MARYLAND.

ATTACHING BAIL-EARS TO COVERED VESSELS.

SPECIFICATION forming part of Letters Patent No. 249,371, dated November 8, 1881.

Application filed September 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. KNAPP, a citizen of the United States of America, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Attaching Bail-Ears to Covered Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved mode of attaching ears to covered sheet-metal vessels—such as oil-cans, paint-cans, and the like—and will first be described in connection with the construction of such a vessel, and then particularly designated in the claim.

In the drawings hereto annexed, Figure 1 is a side view of a vessel previous to the attachment of the cover, showing the first position of the ear. Fig. 2 is a top view of the vessel ready for the ears and cover. Fig. 3 is a vertical section of a vessel, showing the parts ready for attachment. Fig. 4 is a view of a vessel with each of the parts in their proper position to be attached, and a grooved roller, indicating the means employed for attaching the parts. Fig. 5 is a view of the ear. Fig. 6 shows two edgewise views of the ear. The one to the left is the shape in which the ear is first bent; the one to the right is the shape the ear finally assumes. Fig. 7 shows the ear attached to the vessel as it appears immediately after the use of the grooved roller. Fig. 8 is the appearance of the same at the next stage. Fig. 9 is the finished article with bail attached. Fig. 10 is a sectional view on a larger scale, showing the position of the ear between the cover and body.

The letter A designates the cylinder or body of the can or vessel. This may be straight-sided or flaring. The rim or edge of the vessel is first formed with a slight flare or outward flange, *b*, by any suitable means. At that point where the ears are to be attached the flange is cut away, as shown at *c*, to an extent corresponding with the width of the ear. The ear *d* is first bent at its lower end hook shape, as shown in Fig. 6. The bent ear is then

hooked over the cut-away *c*, so that the hook-shaped part *d'* is within the vessel, as seen in Fig. 1.

The cover E is a sheet-metal disk stamped up in such form as leaves a radially-projecting flange, *e*, (shown in Fig. 3,) and an annular shoulder, *f*, adjoining the said radial flange. This cover is placed in position with its annular shoulder setting within the rim of the vessel, said shoulder and the radial flange being in contact with the flange *b* of the vessel. It will be seen that in this position the bent or hook-shaped part *d'* of the ear is between the annular shoulder and the radial flange against the one side of *d'* and the outward flange, *b*, on the rim of the vessel on the other side of *d'*. Fig. 4 shows the parts in the position just described, and when in the course of construction the vessel has arrived at this stage it is placed in a lathe, and by means of a grooved roller, I, which is brought to bear against the radially-projecting flange while the vessel is turning in the lathe, the radial flange of the cover is rolled or spun over, as shown at *g*, so as to inclose and gripe the flange *b* of the vessel, and thereby the cover is firmly attached to the body of the vessel and the bail-ear is firmly attached also. The ear, which up to this time has been turned down against the body of the vessel, as seen in Figs. 1, 4, and 5, is now bent to an upright position, as shown in Figs. 8 and 9, giving the ear, when viewed edgewise, the form shown to the right of Fig. 6.

It will be noticed that the ear is not coiled in or interlocked within the beaded or turned-over edge *g* of the cover of the vessel, and, further, that the cylinder or body has no beaded or turned-over edge; but the ear, it will be seen, is simply clamped by its hook-shaped part in the seam which joins the cover and body of the vessel. Up to the stage last described no solder or rivets are employed in attaching the bail-ear, and in some classes of work nothing further is necessary; but in the better description of work a little solder is applied at the point indicated by the letter *h* in Fig. 9, which holds the upright ear securely to the beaded edge of the cover. The bail *n* is finally attached to the ear, and the device is complete.

I have described one manner of attaching the cover, whereby the bail-ear is secured in the seam of and between the cover and body

of the vessel. This precise manner, however,
of attaching the cover is not at all necessary
to the carrying out of my invention of attach-
ing the ear, as the ear may be secured in sub-
stantially the same way, even though the man-
5 ner of forming the seam be different.

Having described my invention, I claim and
desire to secure by Letters Patent of the United
States—

10 In a sheet-metal vessel, the combination of

a body, a cover for the body, and a bail-ear se-
cured in the seam between the cover and body,
substantially as set forth.

In testimony whereof I affix my signature
in presence of two witnesses.

GEORGE W. KNAPP.

Witnesses:

CHAS. B. MANN,
W. A. NUMSEN.